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ABSTRACT

Farms and the people who live on them differ dramatically from one part of the United States to another. These differences are prominent both from one region to the next as well as between farms and people in the same region. The varying characteristics of agriculture and the farm population have helped shape regional experiences in the 1980s. In the Midwest and Northern Plains, heavy reliance on income from sales of government-supported crops, large numbers of financially vulnerable midsized farms, and fewer alternative sources of income have led to the most widespread farm financial distress and the most persistent calls for agricultural policy remedies. In other parts of the country, income problems among farm households are as often linked to low earnings in manufacturing as in agriculture. Still other parts of the farm population are rather affluent and unaffected by federal farm policies. The varying circumstances in which the farm population lives and works affect the likely impacts of agricultural and rural development policies. In some regions, farm policy remains highly significant to farm households and rural communities as a component of income and economic development. In others, farm people themselves are likely to be affected much more by policies directed to all residents than by policies specifically targeting the agricultural sector. (Author/KC)

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Regional Characteristics of U.S. Farms and Farmers in the 1980's

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Fred Hines

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REGIONAL CHARACTERISTICS OF U.S. FARMS AND FARMERS IN THE 1980'S.
By Matthew G. Smith and Fred Hines. Agriculture and Rural Economy Division, Economic Research Service, U.S. Department of Agriculture.
ERS Staff Report No. AGES880128.

ABSTRACT

U.S. agriculture is diverse. Identifying more homogeneous farming subregions for analysis can aid in understanding the varying geographic impacts of farm policy measures and the degree to which the fortunes of agriculture affect the larger rural economy. Studying in more detail the economic and social characteristics of farm subregions may also provide insights for developing more effective strategies for rural economic development. For example, the heavy reliance of the farm population on wage and salary earnings from off-farm jobs, particularly in manufacturing, may make rural industrial development a more effective means of assisting low-income farm people than traditional farm policy measures that focus on retiring "excess" resources from agriculture. These policies are largely ineffective in reaching people with small amounts of farm resources and/or income.

Keywords: Farm structure, farm population, cluster analysis

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SUMMARY

This paper explores some of the regional diversity of U.S. farms and the farm population in the 1980's. Farms and the people who live on them differ dramatically from one part of the country to another. These differences are prominent both from one region to the next as well as between farms and people in the same region. The varying characteristics of agriculture and the farm population have helped shape regional experiences in the 1980's. In the Midwest and Northern Plains, heavy reliance on income from sales of government-supported crops, large numbers of financially vulnerable midsized farms, and fewer alternative sources of income have led to the most widespread farm financial distress and the most persistent calls for agricultural policy remedies. In other parts of the country, income problems among farm households are as often linked to low earnings in manufacturing as in agriculture. Still other parts of the farm population are rather affluent and unaffected by Federal farm policies. The varying circumstances in which the farm population lives and works affect the likely impacts of agricultural and rural development policies. In some regions, farm policy remains highly significant to farm households and rural communities as a component of income and economic development. In others, farm people themselves are likely to be affected much more by policies directed to all residents than by policies specifically targeting the agricultural sector.

Regional Characteristics of U.S. Farms and Farmers in the 1980's

Matthew G. Smith
Fred Hines

BACKGROUND

U.S. agriculture is diverse in its resources and enterprises, its interaction with nonfarm sectors, and the economic and social characteristics of its people. An appreciation of this diversity can further our understanding of regional differences in the economic performance of the U.S. farm sector and the economic well-being of the farm population during the 1980's. In particular, identifying relatively homogeneous subregions by type of farming as units of analysis can help us make sense of the heterogeneity of the farm sector at the national level. For example, a more detailed look at the characteristics of farms and farm people in the 1980's can also provide insights into the potential effectiveness of alternative agricultural and rural economic development policies in addressing income problems among the farm populations of different regions and the rural population as a whole.

EARLY STUDIES ON U.S. FARM SUBREGIONS

Studies of U.S. farming regions were an important part of the early work of social scientists at the U.S. Department of Agriculture (USDA) and land-grant institutions. Among the earliest examples was W.J. Spellman's "Types of Farming in the United States," published in the 1908 Yearbook of Agriculture [6].[1] Similar works followed in 1915 and 1921 [5,2]. Data from the 1930 Census of Agriculture formed the basis for Elliot's monograph on types of U.S. farming, the most comprehensive study up to that time [4].

Also during the 1930's, several State agricultural experiment stations conducted State studies on types of farming either alone or in cooperation with USDA's Bureau of Agricultural Economics (BAE) (for a list of these State studies, see [8]). These studies laid the groundwork for later research delineating detailed farm subregions. A USDA effort directed by Elliot aggregated 514 types of farming areas into 12 major regions and 100 subregions [7]. The process culminated in 1950 with the BAE publication "Generalized Types of Farming in the United States" [8]. All of these studies were an important basis for Donald Bogue's and Calvin Beale's delineation of U.S. economic areas published in 1961 [3].

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[1]Underscored numbers in brackets refer to items listed in the References.

The main reason for identifying farming regions was to delineate homogeneous areas with respect to the physical and social aspects of the environment that had developed agriculturally, and which continued to affect individual farming operations and the local farm sector. This approach remains highly relevant to understanding the current and prospective performance of the U.S. farm sector.

Integrated regional-level analyses of the characteristics of farming and the farm population have recently lagged, however, in favor of approaches emphasizing the diversity of agriculture at the national level. Thus, revisiting the idea of diverse farm subregions as a means to explore potential spatial impacts on the farm population of alternative farm and rural policies seems useful. We use data from the 1980 Census of Population and the 1982 Census of Agriculture in a cluster analysis to identify relatively homogeneous resource/commodity and farm/nonfarm economic settings. We then explore the diverse farm structure and population characteristics of nine selected U.S. farm subregions. This analysis provides a basis from which to assess regional differences in the impacts on the farm population of alternative public policy choices.

DATA AND METHODS

Data for this study were taken from the Summary Tape File-4 county-level files of the 1980 Census of Population and the county files of the 1982 Census of Agriculture. These are the two most recent detailed data sets available on the demographic and economic characteristics of the farm population and the economic characteristics of farms and farm operators.

The two data sets do not reflect identical populations. The 1980 Census of Population defines the farm population as those persons living in rural places of 1 acre or more from which at least $1,000 of agricultural products were sold in 1979. The 1982 Census of Agriculture, on the other hand, defines farms as all places with actual or potential agricultural sales of $1,000 or more in 1982, and farm operators as the senior partner or person in charge. Thus, the farm population as defined in the census of population includes many people with occupations other than farming and excludes people with farm occupations living off the farm. Farm operators as defined in the census of agriculture may include persons not living on the farm they operate, and thus, they are excluded from the farm population as defined in the census of population. Nevertheless, the scopes of the two censuses are similar enough to make their combination useful in investigating the economic and demographic characteristics of farming and the farm population.

Cluster analysis was used to identify geographic groupings that are relatively homogeneous in three important dimensions of the farm economic environment: the commodity and resource base of farming, the structure of agriculture, and the degree of farm and nonfarm economic integration. To make the cluster analysis tractable, county-level observations were first aggregated into the 121 U.S. economic subregions identified by Bogue and Beale [3]. A large number of the economic subregions, particularly in heavily agricultural areas, were developed on the basis of the State-level studies conducted over the preceding 40 years. These groupings, thus, provide a natural starting point from which

to construct larger aggregates generally similar in terms of farm and nonfarm economic characteristics as well as the farm and nonfarm resource bases. The economic subregions as delineated by Bogue and Beale are shown in figure 1.

A number of different clustering algorithms are available in commercial software packages. They vary in their measures of the "distance" between observations and the criteria by which observations are clustered. This analysis used Ward's method, which successively groups observations on the basis of minimizing the increase in within-group variance [1, pp. 42-44].

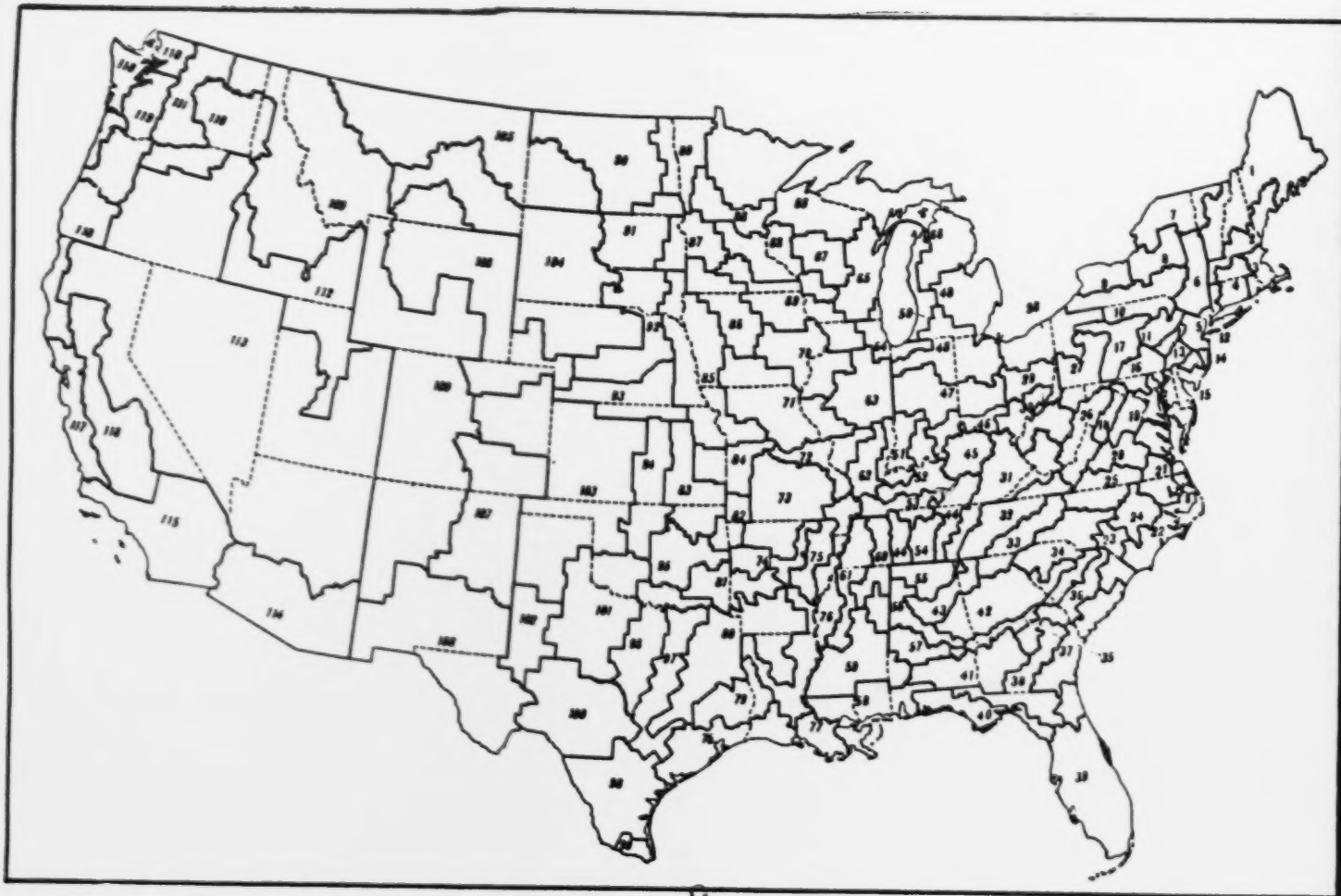
Clustering algorithms are sensitive to the scale of the variables used. To achieve equal variable weights, all variables used in the cluster analysis were normalized to zero mean and unit variance. A total of 12 variables was used in the clustering procedure, 4 to measure each of three dimensions of the farm economic environment.

To represent the commodity base on which farming rests and the relationship of that base to government commodity policies and payments, we grouped farm production by the percentage of total farm sales from six major program crops (corn, wheat, soybeans, cotton, rice, and tobacco), the percentage of dairy sales (program livestock), and the percentage of sales from crops not included in the major program crops above. We measured the quality of the resource base by the average number of acres per farm, with extensive land uses generally reflecting lower productivity.

The structure of agriculture was represented by average sales per farm, the percentage of total sales from farms with annual sales less than $40,000 and from those with sales of $250,000 or more, and the proportion of farm operators working off-farm 200 days or more per year. These variables were chosen to reflect the relative importance of large, small, and part-time farms in each subregion.

The extent to which farm people were integrated into the nonfarm economy was represented by four variables from the census of population. Influences associated with inmigration were reflected in the percentage of the farm population that had lived outside the county 5 years earlier. Participation in the nonfarm labor market was measured by the percentage of the farm population aged 16 and older employed in nonagricultural jobs. Reliance on farm versus nonfarm income is indicated by the percentage of total income of farm households from farm self-employment. And the relative importance of the farm population in the local rural economy and society was suggested by the farm population as a percentage of the total rural population.

Cluster analysis using the 12 variables described above resulted in 13 groups of relatively homogeneous economic subregions (fig. 2). While the clustering algorithm did group many geographically contiguous subregions, a number of the 13 clusters contained geographically separate parts. Because location itself is an important economic variable, only the contiguous portions of nine clusters were selected for detailed study (fig. 3). These farm subregions provide a useful means of exploring the diverse nature of farming and the farm population in the 1980's.



Alaska = 120; Hawaii = 121

Source: (3)

Figure 2. Farming Subregions Identified by Cluster Analysis

Alaska = 12, Hawaii = 8

Key:

1. Northeastern, Great Lakes Uplands and Related Areas
2. Metropolitan Fringe
3. Traditional Dairy
4. Coastal Plains and Related Crop Farming Areas
5. Piedmont and South Central Part-time Farming
6. Eastern Small Crop Farm Areas
7. Eastern Highlands
8. Florida, Texas, and Western Metropolitan Large Commercial Farming
9. Core Corn Belt, Delta, and Related Crop Farming Areas
10. Western Corn Belt and Northern Plains
11. Western Great Plains
12. Rocky Mountains and Intermountain Region
13. Trans-Pecos and Southern New Mexico and Arizona

Figure 3. Selected Farming Subregions

NINE SELECTED U.S. FARM SUBREGIONS

The nine farm subregions described in the remainder of this paper are shown in figure 3. Table 1 lists the values of the 12 variables used in the cluster analysis, in both nominal and rescaled terms, for each subregion. The range of values for each variable illustrates the diversity of U.S. agriculture, with each subregion characterized by a unique combination of attributes. Together, these selected farm subregions contained nearly 50 percent of the farm population in 1980 and nearly 45 percent of all U.S. farms in 1982.

The Wisconsin-Minnesota Dairy subregion, a belt running across the middle of Wisconsin into central Minnesota, relies heavily on dairy sales and has a relatively low proportion of production from large farms and low rates of nonfarm jobholding. As a result, the farm population of the region heavily depends on income from farming.

The Core Corn Belt, extending from northern Illinois to eastern Nebraska and from northern Missouri to southern Minnesota, relies heavily on sales of program crops and has a low proportion of part-time operators. The region depends heavily on farm income, and farmers make up a relatively high proportion of the rural population.

The Delta subregion, as identified here, extends from southeastern Missouri to Louisiana. It depends more than any subregion on sales of program crops, which provided 85 percent of gross farm income in 1982. It has a low proportion of farm operators working full-time off the farm, but the share of the farm population employed outside of agriculture is quite similar to the national average.

The Eastern Highlands subregion, running from southeastern Ohio through the Appalachians into central Tennessee, has very low sales per farm and a very high percentage of total sales from small farms. Farm operators have a greater tendency to work full-time off the farm, and the farm population has a high rate of nonfarm jobholding, resulting in farm households that do not heavily depend on farm income.

The Western Great Plains extends from West Texas to the Canadian border west of the Missouri River. It has a very high average farm size in acreage, and low rates of part-time farming and nonfarm jobholding. The farm population depends heavily on farming for its income.

The Western Corn Belt/Northern Plains subregion runs from northern Kansas to North Dakota, with a spur running down through western Minnesota and north-central Iowa. It has very low rates of part-time farming and nonfarm jobholding, and relies more than any subregion on farming as a source of income. The share of newcomers in the farm population is low. Farmers also make up the largest proportion by far of the total rural population (nearly a third) in this subregion.

The Coastal Plains of the Atlantic seaboard extend from the southern tip of New Jersey to northern Florida and back up to east-central Mississippi. In many respects, this subregion does not differ greatly from the U.S. average. It

Table 1 -- Values of characteristics used in cluster analysis of selected farm subregions, selected farm subregions, 1980-82 1/

Cluster dimensions and variables	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt /Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent					
Commodity/resource base:										
Share of sales from major program crops	14.4 (-.6)	45.2 (1.1)	85.2 (2.8)	31.4 (.3)	23.8 (.4)	41.2 (.7)	41.4 (.9)	12.7 (-.5)	12.5 (-.8)	29.2 (0)
Share of sales from non-program crops	7.8 (-.4)	2.5 (-.9)	6.6 (-.7)	7.4 (-.7)	11.2 (-.4)	10.5 (-.3)	18.5 (-.1)	6.2 (-.6)	53.4 (2.1)	17.8 (0)
Share of sales from dairy products	52.6 (2.3)	6.3 (-.6)	0.5 (-.9)	22.3 (.4)	2.6 (-.8)	3.5 (-.7)	3.4 (-.7)	10.1 (-.4)	14.1 (-.2)	12.0 (0)
Average acres per farm (acres)	201.8 (-.4)	294.5 (-.3)	481.3 (-0)	120.9 (-.5)	2334.3 (2.5)	621.8 (.3)	259.7 (-.3)	142.7 (-.5)	362.0 (-.2)	439.8 (0)
Farm structure:										
Average sales per farm (dollars)	58,585 (-.01)	73,944 (.5)	87,042 (.8)	13,064 (-1.2)	94,080 (.9)	86,111 (.7)	64,500 (.1)	35,396 (-.7)	167,124 (2.6)	58,857 (0)
Share of sales from farms with sales greater than $250,000	22.7 (-1.1)	32.7 (-.6)	54.6 (.5)	16.1 (-1.5)	54.1 (.6)	36.5 (-.4)	47.7 (.2)	48.1 (.2)	84.2 (2.4)	47.3 (0)
Share of sales from farms with sales less than $40,000	11.7 (-.3)	9.8 (-.5)	6.3 (-.9)	43.9 (3.1)	8.1 (-.7)	8.9 (-.5)	9.8 (-.4)	12.03 (-.2)	3.1 (-1.2)	10.9 (0)
Share of operators working 200 or more days off-farm	26.2 (-1.1)	24.7 (-1.2)	25.3 (-1.1)	42.4 (.9)	21.1 (-1.5)	15.0 (-2.3)	33.1 (-.1)	46.0 (1.3)	38.4 (.4)	34.6 (0)
Farm/nonfarm interface:										
Share of farm population living out of county in 1975	7.1 (-.7)	7.8 (-.5)	8.9 (-.2)	8.1 (-.5)	11.9 (.7)	6.9 (-.9)	7.6 (-.6)	7.2 (-.7)	15.8 (2.3)	9.0 (0)
Share of farm population aged 16 years or more holding non-farms jobs	28.9 (-1.3)	28.0 (-.8)	25.7 (-.3)	37.6 (1.2)	20.9 (-1.7)	20.1 (-1.9)	35.0 (.6)	41.0 (1.2)	33.4 (-0)	32.1 (0)
Farm income as share of total income of farm population	35.4 (1.3)	37.4 (1.3)	29.5 (.7)	15.4 (-.9)	37.8 (1.4)	47.2 (2.3)	20.8 (-.6)	18.0 (-.6)	25.2 (-.2)	27.0 (0)
Farm population as a share of total rural population	18.5 (.9)	25.7 (1.7)	9.3 (-.03)	6.7 (-.2)	19.6 (1.0)	33.0 (2.5)	7.3 (-.4)	3.8 (-.8)	10.5 (-.2)	9.4 (0)
Share of U.S. farm population	5.6	14.8	1.7	4.1	3.3	8.0	5.6	2.9	2.9	100.0

1/ All values are simple averages. Values in parentheses are scaled (U.S. mean = 0, variance = 1) values of the independent variables measured at the economic subregion level and used to cluster economic subregions into farming subregions.

Sources: 1980 Census of Population and 1982 Census of Agriculture.

relies somewhat more heavily on sales of program crops and less on dairy sales and has a slightly higher rate of nonfarm jobholding and a lower dependence on farm income.

The Southeast Piedmont, from North Carolina to northern Georgia, relies less than other areas on sales of either program crops or dairy products. It has the highest proportion of operators with full-time off-farm jobs of any of the subregions and a high rate of nonfarm employment by the farm population as a whole. Farming supplies a below-average share of total farm household income, and farmers make up a relatively small percentage of the rural population.

The California Metro subregion consists of the southern, midcoastal, and central valley areas of California. It relies heavily on sales of nonprogram crops and has a very large average farm size and a high proportion of sales from large farms. A very high proportion of the farm population resided in another county 5 years earlier, nearly twice the U.S. average.

These nine farm subregions form diverse settings for agriculture and the farm population. The next sections examine in greater detail the agricultural and farm population characteristics of each of these subregions.

FARM CHARACTERISTICS, 1982

The size distribution of farms varies significiantly across subregions, with the proportion of farms with annual sales of less than $10,000 ranging from under 17 percent in the Western Corn Belt/Northern Plains to over 70 percent in the Southeast Piedmont and Eastern Highlands (table 2). The proportion of large farms (sales of $250,000 or more) varies from less than half a percent in the Eastern Highlands to almost 12 percent in the California Metro subregion.

Midsized farms, with annual sales of $40,000-250,000, are most prevalent in the Wisconsin-Minnesota Dairy, Core Corn Belt, and Western Corn Belt/Northern Plains subregions. In these areas, midsized farms account for 41-48 percent of all farms and contribute 54-65 percent of all farm sales. Large farms dominate production in the Delta, Western Great Plains, and California Metro subregions.

The extent of off-farm employment of farm operators correlates with regional differences in the farm size distribution. The highest proportions of farmers reporting no off-farm work (about 55 percent or more) are found in the Wisconsin-Minnesota Dairy and Western Corn Belt/Northern Plains subregions. The lowest proportions of full-time farm operators are found in the Southeast Piedmont and Eastern Highlands subregions, where only about a third of operators report no off-farm work.

Sources of gross farm income and, thus, the impacts of government commodity policies vary greatly among farm subregions (table 3). Three subregions rely on a single source for over half of all farm receipts: Wisconsin-Minnesota Dairy (54 percent of sales are dairy products), the Western Great Plains (cattle provide 57 percent of all receipts), and the Southeast Piedmont

Table 2 -- Farm structure indicators for selected farm subregions, 1982

Item	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Number					
Farms	90,335	255,261	34,298	127,331	71,543	145,579	109,200	91,955	72,654	2,240,976
					Acres					
Acres per farm	201.8	294.5	481.3	120.9	2,334.3	621.8	259.7	142.7	362.0	439.8
Value of land and buildings:					Dollars					
Per acre	1,224	1,481	1,193	906	270	790	1,052	1,048	2,181	787
Per farm	246,962	436,103	574,384	109,512	630,975	491,263	273,083	149,560	789,633	346,071
Average farm sales	58,585	73,944	87,042	13,064	94,080	86,111	64,500	35,396	167,124	58,857
					Percent					
Share of farms with sales of:										
Less than $1,000	6.0	4.0	9.6	13.8	6.8	2.5	10.1	21.2	17.1	11.3
$1,000-9,999	24.9	21.7	31.0	62.7	22.6	14.4	36.1	51.2	32.9	37.7
$10,000-39,999	25.4	27.3	19.5	17.6	28.8	29.3	22.7	12.5	18.6	22.7
$40,000-99,999	27.1	24.9	15.4	3.8	23.5	30.6	14.2	5.6	10.9	14.9
$100,000-249,999	14.1	17.2	14.9	1.7	13.5	18.0	11.3	6.4	8.8	9.6
$250,000 and over	2.6	4.9	9.6	.5	4.9	5.3	5.8	3.1	11.7	3.9
Share of sales from farms with sales of:										
Less than $1,000	1/	1/	1/	.4	1/	1/	1/	.2	1/	.1
$1,000- 9,999	1.9	1.4	1.5	20.0	1.1	.8	2.3	5.1	.8	2.6
$10,000- 39,999	9.8	8.4	4.8	26.1	7.0	8.1	7.5	6.9	2.4	8.3
$40,000- 99,999	30.8	22.2	11.8	18.5	16.0	23.2	14.4	10.5	4.2	16.5
$100,000- 249,999	34.8	35.3	27.2	18.0	21.7	31.2	27.7	28.7	8.4	24.9
$250,000 and over	22.7	32.8	54.7	17.0	54.2	36.6	48.1	48.7	84.3	47.7
Share of farm operators reporting:										
No off-farm work	54.5	51.5	51.8	33.8	53.4	59.4	44.5	32.7	38.9	42.1
200 or more days off-farm work	28.2	27.3	28.6	46.3	23.8	17.0	37.1	50.0	41.1	37.8

1/ Less than 0.05 percent.

Source: 1982 U.S. Census of Agriculture.

Table 3 -- Major sources of gross farm income, selected farm subregions, 1982 1/

Sales ranking	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
1	Dairy (53.9)	Corn (26.7)	Soybeans (36.4)	Cattle (25.6)	Cattle (57.4)	Cattle (29.1)	Poultry (20.0)	Poultry (58.5)	Fruits (24.4)	Cattle (24.4)
2	Cattle (12.9)	Cattle (23.7)	Cotton (22.2)	Tobacco (24.0)	Wheat (14.9)	Corn (18.9)	Tobacco (17.4)	Dairy (10.6)	Vegetable (14.7)	Dairy (12.3)
3	Corn (11.1)	Hogs (21.0)	Rice (18.6)	Dairy (23.8)	Corn (5.3)	Wheat (13.0)	Soybeans (12.4)	Cattle (8.9)	Dairy (14.2)	Corn (10.5)
4	Hogs (6.4)	Soybeans (17.9)	Wheat (10.5)	Poultry (5.0)	Cotton (4.0)	Hogs (12.6)	Hogs (10.1)	Soybeans (5.5)	Cattle (11.7)	Soybeans (8.1)

1/ Numbers in parentheses represent percentages of total farm sales accruing from each commodity.

Source: 1982 Census of Agriculture.

(poultry account for about 59 percent of gross income).[2] Other subregions have more diversified sources of farm receipts, although the extent to which gross receipts are affected by commodity price support policies varies significantly. The Delta, for example, relies on no single source for the majority of farm sales, yet government program support prices for its four most important products (soybeans, cotton, rice, and wheat), and 85 percent of all receipts in the subregion come from program crops. The California Metro subregion, on the other hand, depends on no single source for even a quarter of total receipts. Of the top four income sources, only dairy sales (at 14 percent of the total) are directly affected by government commodity policies.

Some subregions are more evenly split among both farm income sources and reliance on commodity policies. In the two Corn Belt subregions, for example, corn, wheat, and soybeans figure prominently, along with cattle and hogs, as income sources. In these subregions, the net degree of reliance on government programs is more difficult to assess because they tend to raise feed costs to the subregion's important livestock sector. Thus, the overall effect of an increase in corn support prices on the net incomes of Corn Belt farmers, for example, is complicated by the fact that it increases returns to one important enterprise but raises costs to another. The impacts are complicated still further by the fact that, within any subregion, some farms specialize in one commodity or another while others combine several complementary enterprises.

The combination of farm structure and gross farm income sources helps to explain why the Core Corn Belt, Western Corn Belt/Northern Plains, Delta, and Wisconsin-Minnesota Dairy subregions have been the locus of much of the farm financial distress of the 1980's. These subregions combine some or all of the following elements: a large number of midsized farms, a high proportion of full-time farm operators and heavy reliance on farm income, and a dependence on farm income sources heavily influenced by government commodity policies, which are themselves affected heavily by developments in export markets. The farm sectors of these subregions have been particularly vulnerable to the downturn of the 1980's.

FARM POPULATION CHARACTERISTICS, 1980

The diversity of the farm population from one subregion to another matches the diversity in U.S. farms. The farm populations of various subregions differ greatly from one another in their levels of education, occupations and industries of employment, and degree of reliance on farming for their incomes. These characteristics, together with the differences in farm structure and enterprises, influence the level and distribution of total incomes among the

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[2]Using gross sales to measure the importance of a single commodity or of the farm sector to a regional economy can be a problem because of the large difference that can arise between gross sales and the value added by a particular enterprise. Animal and feed purchases by poultry farms, for example, represent a large share of the gross receipts of poultry farms, indicating that the relative ranking of value added by the poultry farm in a region would be quite different than our ranking based on gross receipts.

farm population and the relative well-being of farmers compared with the total population.

Education

Rates of school enrollment are higher among the U.S. farm population than for the total population aged 7-18 (table 4). More than 11.5 percent of all 16- and 17-year olds are not enrolled in school. For the farm population, the dropout rate for 16- and 17-year olds is 7.5 percent. On the other hand, a much lower proportion of farm 3- and 4-year olds is enrolled in school than among the total population, 15 percent versus 33 percent. This may reflect fewer farm women working outside the home and reduced access to preschool programs in rural areas.

The highest rates of school enrollment among farm 16- and 17-year olds are found in the Core Corn Belt and Western Corn Belt/Northern Plains subregions, with more than 95 percent still in school. Enrollment rates are lowest in the Eastern Highlands and Delta subregions, where they fall well below the average for the total population. School enrollment of 16- and 17-year olds in the farm population exceeds that for the total population in all selected subregions. The difference was greatest, however, in the Core Corn Belt, Western Corn Belt/Northern Plains, and Southeast Piedmont regions, where the enrollment rate for the farm population aged 16-17 was more than 5 percentage points higher than for the total population.

Despite currently higher rates of high school enrollment among the farm population, the proportion of the farm population aged 25 and older who have completed high school is lower than for the total population (62 percent versus 66.5 percent) (table 5). This reflects the continuing effects of historical differences in school enrollment rates and the off-farm migration of better educated youth. While only in the Core Corn Belt does the proportion of high school graduates in the farm population exceed that of the total population, three other subregions have a higher proportion of high school graduates among the farm population than the U.S. total population: the Western Great Plains, the Western Corn Belt/Northern Plains, and the California Metro. The share of high school graduates in the farm population is lowest in the four southern subregions, falling below 50 percent.

The proportion of the farm population with one or more years of college is also less than for the total population, about 22 percent versus 32 percent. In all subregions, the farm population has a lower proportion of persons 25 and over with some college than does the total population. However, overall regional differences in education levels give the farm population of some subregions a much higher proportion of people with some college education than is found among the total population of other subregions. For example, about 35 percent of the farm population of the California Metro subregion have had some college, as have 29 percent of farm residents in the Western Great Plains. This compares with 21 percent of the total population in the Eastern Highlands and 22 percent in the Delta having had at least 1 year of college.

About 3.5 percent of the U.S. farm population aged 25 and over have had 5 or more years of college, often indicating a graduate or professional degree.

Table 4 -- Percentage of persons enrolled in school by age group for farm and total populations in selected farm subregions, 1980

Age	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent					
Farm population:										
3-4 years	13.2	15.9	21.0	11.7	8.2	9.6	20.0	20.4	31.9	14.7
5-6 years	78.3	80.1	76.8	77.9	66.3	73.6	80.9	78.3	84.3	76.1
7-13 years	99.3	99.3	97.7	98.8	98.6	99.1	98.7	99.0	98.2	99.0
14-15 years	98.6	98.6	97.7	96.8	97.5	99.0	97.2	99.0	98.4	97.8
16-17 years	95.0	95.7	85.9	84.9	92.8	97.1	90.8	90.0	90.5	92.5
18 years	65.6	71.2	61.4	52.9	69.8	77.5	65.6	67.0	61.9	66.2
19-24 years	12.3	13.7	18.5	16.3	11.0	12.4	20.3	23.9	26.3	16.2
25-34 years	2.5	2.8	4.4	3.5	2.2	2.1	4.2	4.1	6.8	3.5
35 years or more	.7	.8	.9	.9	.9	.5	1.1	.9	2.2	1.0
Total population:										
3-4 years	27.8	28.2	28.8	20.4	21.9	18.4	32.0	34.6	41.2	32.8
5-6 years	85.5	86.1	83.2	80.8	79.0	79.2	85.6	82.5	90.3	86.3
7-13 years	99.3	99.2	97.5	98.7	98.8	99.1	98.5	98.7	98.6	98.8
14-15 years	99.0	98.5	95.6	96.6	97.6	98.6	97.5	97.4	97.6	97.8
16-17 years	93.4	90.8	83.1	82.7	87.7	93.3	87.6	84.4	88.1	88.4
18 years	69.3	66.8	56.2	55.5	65.4	72.7	59.6	60.0	59.5	62.1
19-24 years	29.4	29.4	20.4	22.1	26.8	28.0	23.8	25.6	28.9	26.8
25-34 years	8.1	8.0	5.1	6.01	7.9	5.8	7.5	6.9	12.4	8.8
35 years or more	1.7	1.6	1.4	1.3	1.8	1.1	2.0	1.6	3.8	2.1

Source: 1980 Census of Population.

Table 5 -- Years of school completed by percentage of population 25 years or more in selected farm subregions, 1980

School years completed	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent					
Farm population:										
Elementary school--										
Less than 8 years	5.1	3.2	22.2	20.3	4.8	3.2	20.2	18.0	10.2	8.7
8 years	21.1	16.3	12.3	19.9	12.9	19.9	8.2	7.7	7.7	14.3
High school--										
1-3 years	10.8	9.8	19.1	14.6	12.2	8.5	25.3	24.7	12.5	14.5
4 years	45.5	49.4	28.2	29.3	40.2	44.0	26.0	28.8	32.9	39.8
College--										
1-3 years	10.5	12.9	8.6	7.2	18.2	16.5	10.5	10.4	20.0	12.5
4 years	4.5	5.9	5.6	4.6	7.9	5.8	5.7	6.4	7.6	6.1
5 years or more	2.2	2.3	2.6	3.2	3.3	1.9	3.0	3.4	7.2	3.6
Median years	12.3	12.4	10.4	10.0	12.5	12.4	11.8	12.0	12.6	12.3
Total population:										
Elementary school--										
Less than 8 years	4.3	5.1	20.5	17.9	7.6	5.0	15.7	16.6	8.1	9.3
8 years	10.8	11.5	8.5	13.2	8.6	15.5	6.6	6.6	4.9	8.0
High school--										
1-3 years	10.3	13.0	17.9	16.1	13.0	10.3	19.2	20.1	12.3	15.3
4 years	40.2	40.6	28.5	30.8	34.4	38.2	30.6	28.6	31.2	34.6
College--										
1-3 years	16.2	14.7	11.0	10.2	18.3	17.0	13.5	13.3	22.4	15.7
4 years	10.1	8.2	6.6	5.9	9.4	8.2	7.7	8.1	9.5	8.6
5 years or more	7.7	6.5	4.7	4.7	7.6	5.4	5.5	5.7	10.3	7.6
Median years	12.6	12.5	12.1	12.1	12.6	12.5	12.3	12.2	12.8	12.5

Source: 1980 Census of Population.

This average ranges from less than 2.5 percent in midsized, full-time farm areas, such as the Wisconsin-Minnesota Dairy, Core Corn Belt, and Western Corn Belt/Northern Plains subregions, to a high of over 7 percent in the part-time, urban California Metro subregion. The two subregions with the greatest proportions of very small farms and low percentages of high school completion rank very high in college education after we adjust for high school graduation rates. In the Eastern Highlands and Southeast Piedmont, 7 percent of those who have completed high school have had 5 or more years of college, a rate exceeded only in the California Metro subregion. Thus, the two areas most clearly dominated by small, part-time farms also show the greatest range in education levels of the farm population, with a high percentage dropping out of high school and a high percentage earning one or more college degrees.

Overall, the median years of schooling of the U.S. adult farm population in 1980 was 12.3 years, only slightly less than the 12.5-year median for all U.S. adults. Median years of schooling of the farm population varies widely across subregions, ranging from 10 years in the Eastern Highlands and 10.4 years in the Delta to 12.6 years in the California Metro subregion. The median schooling of the farm population was at or near the levels of the total U.S. population not only in the California Metro but also in the Core Corn Belt, Western Great Plains, and Western Corn Belt/Northern Plains.

Except in the Eastern Highlands and Delta subregions, differences in schooling levels between the farm and total populations largely reflect the older age structure of the farm population. Current school enrollment data indicate that the future farm population will be at least as well educated as the general population. In most major farming subregions, farm children are continuing in school longer and the younger adult farm population is better educated than the general population. This is particularly apparent in the upper Midwest and Plains, which are dominated by midsized, family farms and which have a tradition of high schooling aspirations and attainment. The high level of education among the farm population is an important factor in easing the transition from farming to other occupations in these most financially stressed areas in the 1980's.

Employment

Most of the U.S. farm population hold primary occupations outside of agriculture (table 6). Of employed persons living on farms, only 45 percent work in farming, forestry, or fishing occupations. Regional rates of farm employment vary with the farm size distribution and rates of part-time farming. In four subregions, most of the farm population is employed in agriculture: Western Great Plains and Western Corn Belt/Northern Plains (65 percent), Wisconsin-Minnesota Dairy (57 percent), and Core Corn Belt (53 percent). Farming is least common as a principal occupation in the Eastern Highlands and Southeast Piedmont (28 percent each).

For a comparison of the occupational distributions of the farm and total populations, the second part of table 6 shows the distributions for nonagricultural occupations only. This allows for a comparison of the kinds of jobs held by farm people who do not identify themselves as farmers with those held by the total population, and between one subregion and another.

Table 6 -- Occupation of employed persons in the farm and total populations of selected farm subregions, 1980

Occupation	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent					
Includes all occupations:										
Farm population--										
Managerial and professional	6.9	8.8	9.6	12.9	8.3	7.1	13.3	14.7	13.8	11.2
Technical, sales, and administrative support	11.1	13.3	16.0	16.2	10.6	10.3	18.2	18.5	18.0	15.0
Service	6.8	7.0	8.4	7.5	5.0	6.4	7.4	6.3	6.9	6.9
Farming, forestry, and fishing	56.8	52.8	44.3	27.9	65.4	64.8	35.5	28.0	44.1	44.8
Precision production, craft, and repair	6.6	6.8	7.7	11.9	4.8	4.6	9.1	12.2	7.9	8.5
Operators, fabricators, and laborers	11.9	11.3	13.9	23.6	5.9	6.9	16.6	20.4	9.4	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total population--										
Managerial and professional	22.5	20.7	18.6	18.8	21.7	19.8	20.3	19.7	25.2	22.7
Technical, sales, and administrative support	29.9	28.3	26.5	25.8	27.3	25.9	27.3	27.4	32.7	30.3
Service	13.6	13.7	13.6	11.8	13.4	14.4	13.4	10.9	12.5	12.9
Farming, forestry, and fishing	4.7	6.7	6.6	2.7	8.6	14.5	4.4	1.9	2.8	2.9
Precision production, craft, and repair	11.4	12.0	13.9	16.0	14.4	11.1	13.6	13.9	12.3	12.9
Operators, fabricators, and laborers	17.9	18.6	20.8	24.9	14.6	14.3	21.1	26.2	14.6	18.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excludes farming, forestry, and fishing occupations:										
Farm population--										
Managerial and professional	15.9	18.7	17.3	17.9	23.9	20.1	20.6	20.4	24.6	20.3
Technical, sales, and administrative support	25.6	28.1	28.8	22.4	30.8	29.2	28.2	25.6	32.1	27.1
Service	15.8	14.9	15.2	10.4	14.4	18.1	11.4	8.7	12.3	12.5
Precision production, craft, and repairs	15.1	14.4	13.9	16.5	14.0	13.0	14.1	17.0	14.1	15.4
Operators, fabricators, and laborers	27.6	24.0	24.9	32.7	17.0	19.7	25.7	28.3	16.9	24.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total population--										
Managerial and professional	23.6	22.2	20.0	19.3	23.8	23.2	21.3	20.03	25.9	23.4
Technical, sales, and administrative support	31.3	30.4	28.4	26.5	29.9	30.3	28.5	27.9	33.7	31.2
Service	14.3	14.7	14.6	12.2	14.6	16.8	14.0	11.1	12.8	13.3
Precision production, craft, and repairs	12.0	12.8	14.8	16.4	15.8	13.0	14.2	14.2	12.7	13.3
Operators, fabricators, and laborers	18.8	20.0	22.2	25.6	16.0	16.7	22.1	26.7	15.0	18.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Census of Population, 1980.

Overall, the occupational distribution of the 50 percent of the farm population not employed in agriculture does not differ dramatically from that of the total population. The farm population holds fewer jobs in managerial, professional, technical, sales, and service occupations and more jobs in production, craft, operator, and laborer occupations. The biggest difference comes in the operator/laborer category, which includes a quarter of the farm population not employed in agriculture but only 19 percent of the total population.

The off-farm occupational mix of the farm population varies among subregions. The highest rate of employment in managerial and professional jobs (25 percent each) is found in the California Metro subregion. This rate is only slightly less than the rate for the total California Metro population and higher than for the U.S. population. The Wisconsin-Minnesota Dairy subregion has the lowest rate of managerial and professional jobholding, in both absolute terms and after adjusting for farm occupations, at about 16 percent of the farm population not employed in agriculture.

The Eastern Highlands (33 percent) and Southeast Piedmont (28 percent) have the highest rates of employment in operator and laborer occupations. The Southeast Piedmont is also one of only two subregions (along with the Western Great Plains) in which the rate of employment of the farm population in managerial and professional jobs (20 percent each, after adjusting for agricultural jobs) is higher than for the region's total population. The distribution of employment by industry shows similar variation in the importance of agriculture to the farm population, employing 46 percent of the farm population nationally and between 28 percent (Eastern Highlands) and 67 percent (Western Great Plains) by subregion.

Excluding those employed in agriculture, employment of the U.S. farm population by industry closely follows that of the total population. The farm population is represented slightly more heavily in forestry, mining, construction, and manufacturing and less heavily in finance, insurance, real estate, services, and public administration (table 7).

Regional distributions of employment of the farm population by industry parallel those for the total population. One important difference concerns manufacturing employment, however. Overall, just over 13 percent of the farm population is employed in manufacturing. Of those employed in all nonagricultural industries, the percentage in manufacturing rises to almost 25 percent compared with just over 23 percent for the total population. But, in the three subregions where total rates of manufacturing employment are substantially above the U.S. average (the Southeast Piedmont, Wisconsin-Minnesota Dairy, and Eastern Highlands) the adjusted rates of manufacturing employment of the farm population are substantially higher than for the total population. Thus, in subregions that depend heavily on manufacturing employment, the farm population depends even more on manufacturing industries for jobs outside of agriculture.

In such subregions as the Eastern Highlands and Southeast Piedmont, where manufacturing rivals agriculture as the major industry of the farm population, the importance of the manufacturing sector to economic well-being is obvious. However, even in an area such as the Wisconsin-Minnesota Dairy subregion, where

Table 7 -- Work industry of employed persons in the farm and total populations, selected farm subregions, 1980

Work industry	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent					
Includes all industries:										
Farm population--										
Agriculture	57.6	53.8	46.5	27.9	67.1	65.9	36.3	28.6	47.9	45.8
Forestry, fisheries	.1	1/	.2	.2	.1	1/	.4	.2	.1	.2
Mining	.1	.3	.8	1.8	1.4	.2	.3	.4	.3	.8
Construction	3.3	3.6	4.4	6.2	2.9	2.4	5.3	5.9	4.3	4.5
Manufacturing	13.1	10.4	10.9	23.5	2.7	5.1	16.5	24.6	7.2	13.4
Transportation, communication, and public utilities	2.7	3.4	3.7	5.3	3.1	2.3	4.0	5.4	4.7	4.0
Trade	8.7	10.5	11.3	11.4	7.4	8.6	12.5	11.8	12.3	10.8
Finance, insurance, and real estate	1.9	2.5	2.3	2.5	1.7	1.7	2.6	2.8	3.1	2.5
Services	11.3	14.0	17.0	17.8	11.3	12.3	17.8	16.3	16.9	15.4
Public administration	1.4	1.6	2.9	3.5	2.3	1.5	4.3	3.8	3.1	2.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total population--										
Agriculture	4.8	6.9	7.0	2.5	9.0	15.1	4.1	1.8	2.9	2.8
Forestry, fisheries	.1	1/	.2	.1	.2	1/	.4	.1	.1	.2
Mining	.1	.4	3.0	5.6	5.1	.4	.2	.5	.4	1.1
Construction	4.9	5.2	7.4	6.7	7.7	6.0	7.1	6.4	5.6	5.9
Manufacturing	25.1	21.5	17.8	24.2	10.7	11.5	22.6	31.4	20.6	22.4
Transportation, communication, and public utilities	6.2	7.5	7.2	8.0	7.6	6.9	6.2	7.4	7.1	7.3
Trade	21.2	20.9	20.9	18.9	21.4	22.6	20.0	18.7	20.8	20.4
Finance, insurance, and real estate	5.8	5.5	4.4	4.1	4.7	5.1	4.5	4.9	7.2	6.0
Services	28.3	27.7	27.8	25.4	28.4	27.9	27.7	24.4	30.3	28.7
Public administration	3.6	4.3	4.4	4.5	5.2	4.4	7.1	4.3	5.03	5.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

--Continued

Table 7 -- Work industry of employed persons in the farm and total population of selected farm subregions, 1980--Continued

Work industry	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent					
Excludes agriculture:										
Farm population--										
Forestry, fisheries	0.2	0.1	0.4	0.3	0.4	0.1	0.7	0.3	0.2	0.4
Mining	.2	.7	1.6	2.5	4.3	.6	.5	.6	.6	1.6
Construction	7.7	7.7	8.3	8.6	9.0	7.1	8.3	8.3	8.3	8.3
Manufacturing	30.9	22.5	20.3	32.6	8.1	15.0	25.9	34.5	13.8	24.7
Transportation, communication, and public utilities	6.2	7.4	7.0	7.3	9.3	6.8	6.3	7.6	9.1	7.3
Trade	20.6	22.6	21.0	15.8	22.5	25.3	19.6	16.6	23.5	19.9
Finance, insurance, and real estate	4.4	5.4	4.2	3.5	5.1	4.8	4.1	3.9	6.0	4.6
Services	26.6	30.2	31.9	24.6	34.3	35.9	27.9	22.9	32.5	28.4
Public administration	3.2	3.4	5.4	4.9	7.0	4.5	6.8	5.4	6.0	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total population--										
Forestry, fisheries	.1	1/	.2	.1	.2	.1	.4	.1	.1	.2
Mining	.1	.4	3.2	5.7	5.6	.5	.2	.6	.4	1.1
Construction	5.1	5.6	8.0	6.9	8.5	7.0	7.4	6.5	5.7	6.1
Manufacturing	26.3	23.1	19.1	24.8	11.8	13.6	23.6	32.0	21.2	23.1
Transportation, communication, and public utilities	6.5	8.1	7.8	8.2	8.3	8.1	6.5	7.5	7.3	7.5
Trade	22.3	22.5	22.5	19.4	23.5	26.6	20.9	19.1	21.5	21.0
Finance, insurance, and real estate	6.1	5.9	4.7	4.2	5.2	6.0	4.7	5.0	7.4	6.2
Services	29.7	29.8	29.9	26.1	31.2	32.9	28.9	24.9	31.2	29.5
Public administration	3.8	4.7	4.7	4.7	5.7	5.2	7.4	4.4	5.2	5.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ Less than 0.05 percent.

Source: 1980 Census of Population.

farming is the major occupation, almost one-third of off-farm employment is concentrated in production and operator occupations and manufacturing industries. This makes a significant portion of the region's farm population vulnerable to a downturn in the manufacturing sector. This is particularly true when the downturn coincides with periods of farm financial stress, as the farm population often relies on nonfarm earnings to help service farm debt.

Income

U.S. farm households depend much more heavily on wages and salaries from off-farm jobs for total incomes than on farm self-employment earnings (table 8). About 48 percent of farm household earnings came from wages and salaries in 1979, a relatively profitable year for agriculture, compared with only 27 percent from farming. Reliance on farm income varied by subregion, from a high of 47 percent of total income in the Western Corn Belt/Northern Plains to a low of 15 percent in the Eastern Highlands.

The farm population also received a much higher proportion of its income in the form of interest, dividends, and rents than did the total population. About 9.5 percent of the total income of farm households in 1979 came from property, compared with 6.1 percent for the total population. This largely reflects the high value of agricultural assets held by the farm population, with the degree of reliance on property income roughly paralleling the average assets per farm reported in table 2.

Income from rents is most important in the cash grain regions of the Midwest, Delta, and Plains, areas in which the farmland value has declined most severely. This suggests an important secondary impact of farm financial stress on the farm population: a decline in farmland values and rents diminishes another significant source of earnings for farm households.

Nonfarm self-employment income provides a larger share (about 50 percent more) of nonagricultural earnings of the farm population than of the total U.S. population. The greatest proportion of nonfarm earnings coming from self-employment is found in the Western Great Plains and California Metro subregions. This is probably a function of the higher levels of education and professional jobholding found among the farm populations of these two areas.

Social security income is very important to the farm population in some subregions. It amounts to over 7 percent of total household income of the farm population in the Eastern Highlands, equaling almost half the total derived from farming. Overall, however, social security provides about the same proportion of the income of U.S. farm households as it does for the total population.

Public assistance income makes up a much lower percentage of the income of the farm population than it does for the total population. This income source is most significant in the Delta, where it constitutes nearly 1 percent of the total income of the farm population. This illustrates the particular diversity of the farm population within the Delta, which combines above-average reliance on farm income and interest, dividends, and rents with above-average dependence on public assistance and social security.

Table 8 -- Sources of household income for farm and total households in selected farm subregions, 1979

Income source	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent					
Includes all income sources:										
Farm population--										
Wages and salaries	46.4	40.6	42.3	58.3	39.4	31.6	50.6	57.6	49.1	48.1
Nonfarm self-employment	5.0	5.6	6.7	6.9	6.4	5.2	6.7	7.0	7.5	6.7
Farm self-employment	35.4	37.4	29.5	15.4	37.8	47.2	20.8	18.0	25.2	27.0
Interest, dividends, and rents	7.3	9.3	11.6	7.1	10.2	9.3	10.0	7.2	11.0	9.5
Social Security	3.8	4.8	6.0	7.3	4.3	4.9	7.04	6.3	3.4	5.3
Public assistance	.4	.3	10.0	.7	.3	.2	.8	.5	.5	.4
Other sources	1.8	2.1	3.1	4.3	1.7	1.5	4.1	3.4	3.3	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total population--										
Wages and salaries	77.9	73.1	70.4	74.9	72.0	65.2	74.6	78.9	74.7	75.8
Nonfarm self-employment	5.4	6.0	7.5	6.0	8.3	7.3	5.7	5.5	7.7	6.1
Farm self-employment	2.1	4.5	3.7	1.0	4.2	10.0	1.5	.7	.6	1.1
Interest, dividends, and rents	5.9	6.4	5.6	4.5	6.5	7.3	5.2	4.4	6.9	6.1
Social Security	4.7	5.6	6.1	6.8	4.7	6.5	5.8	5.4	4.1	5.2
Public assistance	.7	.6	1.9	1.3	.6	.6	1.3	.9	1.3	1.0
Other sources	3.3	3.8	4.8	5.5	3.8	3.0	6.03	4.3	4.8	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Excludes farm self-employment income:										
Farm population--										
Wages and salaries	71.8	64.9	59.9	68.9	63.3	59.8	63.9	70.2	65.7	65.9
Nonfarm self-employment	7.7	9.0	9.5	8.2	10.3	9.9	8.5	8.6	10.0	9.2
Interest, dividends, and rents	11.3	14.8	16.5	8.4	16.4	17.6	12.6	8.7	14.7	13.0
Social Security	5.8	7.6	8.4	8.6	6.8	9.3	8.9	7.7	4.6	7.3
Public assistance	.6	.5	1.2	.9	.4	.5	1.0	.6	.6	.5
Other sources	2.8	3.3	4.4	5.1	2.8	2.9	5.2	4.2	4.4	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total population--										
Wages and salaries	79.6	76.6	73.1	75.7	75.1	72.5	75.7	79.4	75.1	76.6
Nonfarm self-employment	5.5	6.3	7.8	6.1	8.6	8.1	5.8	5.6	7.7	6.2
Interest, dividends, and rents	6.0	6.8	5.8	4.6	6.8	8.2	5.3	4.5	7.0	6.2
Social Security	4.8	5.8	6.4	6.9	4.9	7.2	5.9	5.4	4.1	5.3
Public assistance	.7	.6	1.9	1.3	.6	.7	1.3	.9	1.3	1.0
Other sources	3.4	4.0	5.0	5.6	4.0	3.4	6.1	4.3	4.8	4.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Census of Population, 1980.

The distribution by source of the total income of farm households in a subregion masks the degree to which individual households rely on income from farming. The percentage of farm households relying on farm self-employment for most of their income varies widely by subregion. About 46 percent of U.S. farm households derive 50 percent or more of their total income from farm self-employment earnings (table 9). This ranges from a high of 69 percent in the Western Corn Belt/Northern Plains and 64 percent in the Western Great Plains to a low of 24 percent in the Eastern Highlands and 26 percent in the Southeast Piedmont. More than half of the farm households in these latter two areas earn less than 25 percent of their income from farming.

Total household income of the farm population, thus, reflects a myriad of forces: the human capital endowments the farm population brings to both farm and nonfarm activities, the opportunities available in the nonfarm economy, the natural resource base available for agriculture, and the profitability of farming. The U.S. farm population had a 1979 median household income of $16,634, slightly less than the median of $16,959 for all U.S. households (table 10). In three subregions (the Wisconsin-Minnesota Dairy, Core Corn Belt, and California Metro), the median income of the farm population was well above the overall U.S. average. And in four subregions (the Core Corn Belt, Delta, Southeast Piedmont, and California Metro), the median income for farm households was higher than that of all households in the subregion.

Regional differences in farm household income parallel those for all households. The lowest median income of farm households was found in the Delta and Eastern Highlands, where the median household income was also the lowest of the subregions studied. However, while median farm income in the Eastern Highlands was only slightly less than that of all households, the median farm income in the Delta was 11 percent higher than that for the total population.

The farm population of the Delta also exhibits the most uneven income distribution: 38 percent of households had income of less than $10,000, while 7 percent reported $50,000 or more. This compares with 29 percent and 6 percent, respectively, for the total farm population and 29 percent and 5 percent for the total U.S. population. The Delta's uneven income distribution is partly explained by the occupational structure of the region's farm population, with a large percentage employed as relatively low-paid farm laborers.

About 44 percent of farm households had incomes between $15,000 and $40,000, compared with 46.5 percent of U.S. households. The heaviest concentration of farm households in this middle-income range was found in the Wisconsin-Minnesota Dairy (48 percent) and Core Corn Belt (47 percent) subregions, while the lowest was in the Delta (35 percent).

IMPLICATIONS FOR FARM AND RURAL DEVELOPMENT POLICIES

The diversity of U.S. agriculture and farm people from one region to another and from one farm or household to another has important implications for public policy. Interregional and intraregional differences among farms and farmers

Table 9 -- Importance of farm self-employment income to farm households in selected farm subregions, 1979

Farm self-employment as a percent of total household income	Wisconsin-Minnesota Dairy	Core Corn Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent of households					
Less than 25 percent	26.9	22.7	29.6	56.0	18.5	13.7	39.8	53.4	36.8	34.2
25.0-49.9 percent	17.6	18.5	18.2	20.1	17.8	16.8	22.0	20.3	20.2	19.3
50.0-74.9 percent	18.1	18.7	17.6	10.3	18.5	19.5	15.5	10.8	16.2	15.9
75.0 percent or more	37.5	40.1	34.6	13.6	45.3	50.0	22.7	15.6	26.9	30.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: 1982 Census of Agriculture.

Table 10 -- Household income levels for the farm and total population in selected farm subregions, 1979

Household income	Wisconsin-Minnesota Dairy	Core Corn-Belt	Delta	Eastern Highlands	Great Plains	Western Corn Belt/Northern Plains	Coastal Plains	Southeast Piedmont	California Metro	United States
					Percent of all households					
Farm population:										
Less than $5,000	9.9	11.6	17.7	16.7	14.7	15.6	16.5	11.7	6.9	12.2
$5,000-9,999	14.2	14.5	20.7	21.6	18.1	16.9	20.6	17.3	11.2	16.5
$10,000-14,999	15.8	16.7	16.3	17.6	17.7	18.2	17.1	16.6	14.9	16.7
$15,000-19,999	14.4	15.2	11.4	13.4	13.2	14.2	13.2	14.5	12.7	14.2
$20,000-29,999	21.9	21.5	16.1	18.0	17.7	18.8	17.7	20.4	20.2	20.2
$30,000-39,999	11.4	10.2	7.6	7.1	8.7	8.3	7.7	10.2	13.2	9.9
$40,000-49,999	5.4	4.6	3.3	2.6	4.1	3.7	3.2	4.4	7.5	4.5
$50,000-74,999	4.8	4.1	3.7	1.8	3.8	3.1	2.6	3.2	7.8	3.8
$75,000 or more	2.2	1.7	3.1	1.2	2.0	1.2	1.4	1.8	5.7	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
					Dollars					
Median income	18,518	17,393	13,564	13,306	14,856	14,822	13,774	16,539	21,067	16,634
					Percent of all households					
Total population:										
Less than $5,000	10.0	12.4	23.0	17.8	13.7	14.8	17.0	15.2	11.4	13.3
$5,000-9,999	14.2	15.7	20.0	19.6	17.2	18.0	18.8	17.1	14.7	15.9
$10,000-14,999	14.4	15.4	16.1	16.9	16.6	17.4	17.2	16.7	14.7	15.3
$15,000-19,999	14.6	15.0	12.5	14.5	14.6	15.2	14.4	15.0	13.2	14.1
$20,000-29,999	25.0	23.2	16.2	19.0	21.0	20.5	19.1	20.8	21.5	21.7
$30,000-39,999	12.2	10.7	6.7	7.2	9.5	8.1	7.8	8.8	12.2	10.7
$40,000-49,999	4.7	4.0	2.5	2.5	3.7	3.0	2.9	3.2	5.8	4.5
$50,000-74,999	3.3	2.7	1.9	1.7	2.6	2.2	1.9	2.2	4.5	3.2
$75,000 or more	1.5	1.1	1.2	.8	1.2	.9	.9	1.1	2.0	1.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
					Dollars					
Median income	18,889	17,177	12,173	13,720	15,866	14,945	14,114	15,336	18,485	16,959

Source: 1980 Census of Population.

influence the potential effectiveness of alternative farm policy and rural development strategies.

Concerns over aggregate levels of farm income are important in shaping agricultural commodity policies and broader rural economic development efforts. Yet, income from farming, particularly income from commodities directly affected by government policies, is considerably localized in its overall importance to the farm population.

Most U.S. farm households depend more on wages and salaries from off-farm jobs for income than on farm earnings. However, in some regions, notably the Midwest and Northern Plains, farm income remains very important to farm households in the aggregate and provides most of the income to the majority of farm households. In these areas, in which farmers also typically make up a relatively high proportion of the total population, agricultural commodity policies have their greatest potential impact on the well-being of farmers and other rural people and are most viable as a means for rural economic development.

In the Midwest and Plains regions most heavily dependent on agriculture, median income of the farm population in 1979 was somewhat below the U.S. average but fairly comparable to those for all local households. The lowest income among the farm population is found in subregions that depend less overall on farm earnings: the Delta, Eastern Highlands, and Coastal Plains. In these farm subregions agriculture plays a supplemental role in household incomes. In two of them (the Eastern Highlands and Coastal Plains), the bulk of agricultural production consists of products not covered by government price support programs. Current farm commodity price support policies are, thus, not well suited to addressing the most severe income problems of the farm population.

Regional differences in farms and farm households will significantly affect the effectiveness of alternative policies, such as those that focus on small-farm operators, by offering vocational training and other assistance to increase off-farm earnings. Regions typified by large numbers of small farms exhibit great diversity in the education levels, occupations, and incomes of the farm population.

The California Metro subregion, with its heavy inmigration of urban people and ready access to off-farm employment, is characterized by a large proportion of very small farms, with a farm population that is well educated, is employed in professional jobs, and earns high incomes.[3] The Eastern Highlands has also

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[3]However, a large portion of farm laborers working in the California Metro subregion do not reside on farms and, thus, are not included in this analysis. This points to another shortcoming of focusing on farm residents or farm operators to gauge the well-being of those engaged in farming. The problem is most pronounced in regions of highly industrialized agriculture, such as the California Metro subregion. In these areas, small-farm residence or even operation, in the sense of ownership, takes an increasingly consumptive rather than productive cast, while urban-based laborers employed in production on commercial-sized farms are excluded from the farm population because of a lack

traditionally been characterized by small farms, but its farm population is less educated, faces a less buoyant nonfarm sector, is more heavily employed in manual occupations, and earns much lower incomes. The Southeast Piedmont exhibits a mixture of the two tendencies, with large elements of both poorly and highly educated farm people and above-average employment in both manual and professional occupations. Thus, strategies that focus on some aspect of small farms will have to contend not only with the diversity of the small-farm population by subregion but also within subregions.

The impact of agricultural policy reforms that target Federal commodity program benefits to midsized farms will also vary by subregion. The reforms will have the greatest impact in the Wisconsin-Minnesota Dairy and two Corn Belt subregions, which have a high overall dependence on farm income, high proportions of farm households that depend on farm income, and a high proportion of midsized farms that produce program commodities. The Delta, despite extremely high reliance on sales of government-supported crops, has relatively fewer midsized farms, a lower share of farm households that depend on farm income, and a lower overall dependence on farm income. In the Western Great Plains, despite high reliance on farm income and a high proportion of midsized farms, sales of program commodities are less important and net income from the major product (cattle) could actually be hurt by policy changes that increase feed costs.

Farm population characteristics also influence the potential effectiveness of nonagricultural policies. Job retraining programs created in response to farm financial distress would likely be focused on the farm populations of the Midwest and Northern Plains. However, these are already among the best-educated segments of the farm population and, by some measures, are better educated than the U.S. population. The lowest education levels among the U.S. farm population are not found in the commercial farming regions undergoing financial stress in the 1980's but rather are in part-time farming regions in which chronically low levels of education and income have existed for decades. A job training effort directed toward present and former commercial farmers in the Midwest and Plains thus may not have as great an impact on future earnings as one focusing on marginal producers in the South.

Economic development that results in more and better jobs for all rural residents is likely to have a much more significant impact on low-income farm households than any agricultural policy measure. In the subregions with the lowest median incomes (the Delta, Eastern Highlands, and Coastal Plains) the farm population makes up only a small portion of rural residents and earns two-thirds or more of its total income off the farm.[4] Yet, these subregions have

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of farm residence and/or ownership. The problem of defining who is and is not a farmer, thus, has important implications for judging the effects of farm policy and the well-being of farm people.

[4]However, many farm residents, particularly in the Delta, derive wage and salary income from work on other farms. Therefore, their income is farm derived, but the tabulations mask the importance of this source by aggregating it with all other wage and salary income.

higher than average employment in production, craft, operator, and laborer occupations. When working the farm, the farm population is still more heavily concentrated off these jobs. Thus, rural nonfarm development that leads to improved earnings in manual occupations is likely to have an even greater marginal impact on the low-income farm population than on the total population.

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